Remarks by
Secretary of Energy Spencer Abraham
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It is a great pleasure to be a part of the 13th Annual Energy Efficiency Forum.

One year ago tomorrow, Vice President Cheney gave the keynote address at this forum.

Now that a year has passed, it is appropriate that we take stock of the progress the Bush Administration has made over the past twelve months in addressing the significant energy challenges the Vice President outlined.

In short, we have made remarkable progress toward implementing a comprehensive and balanced energy policy that is both practical and visionary.

From our very first week in office, we knew that the United States faced an energy crisis, and President Bush recognized that we needed a long-term plan to meet our long-term energy challenges. That plan was outlined in a National Energy Policy with 105 specific recommendations for action.

And we have moved quickly to implement those recommendations.

Most of the 105 recommendations could be handled through administrative action, and we have either completed or are well on our way to completing over three-quarters of them.

The remaining recommendations require legislation, and Congress, at the President's urging, has made progress. The House and the Senate have each passed bills, and it is clear that the national energy policy's recommendations have enjoyed broad support in Congress.

Of the 22 specific proposals that required legislative action, 21 have either already been enacted into law, or are contained in either the House or the Senate energy bills that are headed to Conference.

Both the House and Senate passed their bills with huge bipartisan majorities and we expect a comprehensive and balanced final bill will be headed to the President's desk for his signature this year.

But as much as we have accomplished, I believe the most exciting energy breakthroughs are ahead of us - many in the realm of energy efficiency and renewable energy.

In fact, they have to be, and I'll explain why.

Our long-term supply challenges can be summarized this way.

The United States consumes almost 99 quadrillion BTUs of energy in this nation annually.

According to estimates from the Energy Information Administration, in just two decades we will need 175 quads of energy. That's three-quarters more than Americans consume today.

We used these projections as the basis for our energy plan. EIA also projected that of the extra 76 quads that will be needed, we should offset almost two thirds of that - 48 quads - though conservation and energy efficiency measures, leaving a supply shortfall of 28 quads.

Much of the commentary and criticism of our energy plan has focused on the measures we proposed to meet that 28 quad shortfall, particularly drilling for oil in a remote spot in the Alaska National Wildlife Refuge.

But to my mind what's equally important - perhaps even more important - is something the critics and commentators have largely ignored. And that's the 48 quads worth of efficiency and conservation gains. Because if we can't get those conservation and efficiency gains, it won't make any difference how much oil we recover in Alaska or how many new power plants are built. We won't be able to keep up with the demands of a dynamic and growing economy.

So modernizing energy efficiency and increasing our use of renewable energy resources have always been an important part of President Bush's balanced energy plan. Of the 105 recommendations in our National Energy Policy, 54 of them pertain to energy efficiency and renewable energy.

Guided by our plan, we have proposed to spend more for the activities of the Office of Energy Efficiency and Renewable Energy than we do for the Office of Fossil Energy and the Office of Nuclear Energy combined.

But spending more on these programs is a relatively easy and politically popular thing to do. Getting more from them is the real challenge.

Thanks to a Strategic Program Review recommended by the President's Energy Plan and initiatives contained in the President's Management Agenda, the Office of Energy Efficiency and Renewable Energy is reorienting its programs and even radically changing its own organizational structure to achieve better results.

And when we speak of "modernizing" conservation, we are talking about banishing the notion that conservation means huddling by the fireplace in a favorite sweater.

Instead, we want to pursue cutting edge technologies that deliver energy services in a more efficient manner, so that the consumer of those energy services is not doing without, but actually getting more while using less.

Let me give you a few examples.

This past January we unveiled our FreedomCAR initiative. The "CAR" in FreedomCAR stands for Cooperative Automotive Research. We envision fuel cell vehicles that are fueled with hydrogen, run far more efficiently than internal combustion engines, and emit nothing but water vapor.

But it is not enough to develop the technology for a potentially petroleum-free, emission-free car or light truck.

We also want Americans to retain the freedom to choose the car or light truck that suits their needs and the freedom to drive where they want to, when they want to. This is the approach of FreedomCAR.

While focusing on fuel cell technologies and the hydrogen infrastructure to support them, we are not abandoning nearer term technologies such as hybrid gasoline electric vehicles for the simple reason that the power electronics, battery, and electric motor technology needed for fuel cell vehicles are also needed for hybrid vehicles.

By advancing toward fuel cell vehicles, we will also make great gains toward more advanced hybrid vehicles.

But it is important to recognize that FreedomCAR embodies a different approach from the old PNGV program, which was aimed at producing an 80 mile-per-gallon family sedan that was too costly for the market and did not meet the full range of consumer needs.

That's what we mean by "modernizing conservation" in the transportation context. Instead of telling Detroit that we want a car that achieves a certain mileage figure, irrespective of consumer acceptance, we are working collaboratively on a new technology that preserves consumer choice, recognizes market forces, and ensures safety.

And let me emphasize that we are not, as some have claimed, pursuing FreedomCAR as a substitute for CAFE. That's clear from the President's Energy Plan, which recommends that the Department of Transportation undertake a new round of CAFE rulemaking.

Congress agrees, and now has provided the funding for the Department of Transportation to move forward and issue new CAFE guidelines.

Having said that, wouldn't it be great if technological success with FreedomCAR someday made command and control fuel efficiency regulations unnecessary?

FreedomCAR only addresses one part of the transportation sector - light-duty vehicles. That doesn't mean we give no thought to other areas, such as the heavy-duty transportation needs posed by large over-the-highway trucks.

While FreedomCAR is concerned with light-duty vehicles, we are also working with trucking industry partners on a revitalized 21st Century Truck initiative.

Unlike FreedomCAR, which is focused on hydrogen powered fuel cells, this 21st Century Truck Partnership will center on advanced combustion engines and heavy hybrid drives that can use renewable fuels.

The new technologies in these engines and drives could, in effect, result in heavy truck transportation using dramatically less diesel fuels and throwing off virtually no emissions of NOx or soot.

These are all just examples of exciting new technology initiatives we are considering, and there are many, many more.

In our budget submission to Congress in February we unveiled a number of other technology initiatives apart from FreedomCAR designed to modernize conservation.

As I mentioned earlier, as a consequence of the President's Energy Plan, this year we sought more funding for our energy efficiency and renewable energy programs. In nominal dollars, our 2003 request represents a higher funding level for these activities than was appropriated last year or any prior year since 1981.

We have proposed to increase funding for a variety of programs to develop cutting-edge technology. For example:

- Increases in the High Temperature Superconductivity and related energy systems and storage technologies that are designed to increase the efficiency and reliability of our electricity infrastructure.
- Increases in the wind energy program that will be focused on the development of low wind speed turbines designed to make wind energy more economically attractive in areas closer to population and load centers.
- Increases in Solar Building Technology research that will be targeted toward the achievement of "Zero Net Energy Buildings," or buildings that produce on average as much energy as they use.

As exciting as the future applications of these advanced technologies might be, we must also make a difference today in the lives of Americans by enhancing their energy choices and their quality of life.

Therefore, we also proposed a substantial funding increase for the Weatherization Assistance Program designed to reduce the energy bills of low-income homeowners who spend a disproportionately large share of their income on energy.

The Bush Administration is seeking $277 million for weatherization in Fiscal Year 2003, up from only $153 million when we took office. That's a substantial down payment on the President's $1.4 billion pledge to weatherize more than one million American homes over the next decade.

Another area of exciting possibilities is the new technology being developed to advance more efficient lighting systems. Consider the lights that illuminate this room. They are a major consumer of electricity.

Nationwide, lighting consumes seven quadrillion BTUs or more in a given year, or 7 percent of all energy usage.

On top of that, less efficient incandescent bulbs produce large amounts of heat that our climate control systems must manage, so we pay an additional energy penalty as well.

While modern florescent bulbs with electronic ballasts are more efficient, they remain glass nodules filled with gas not unlike the vacuum tubes of the last generation of electronics.

The time has come to take the next step toward solid state lighting. And I have an example here.

This inorganic light emitting diode is to florescent lamps what transistors were to vacuum tubes, or what the automobile was to the horse-and-buggy. It's a revolutionary technological innovation that promises to change the way we light our homes and businesses.

LEDs like this one use solid state technology to perform more work using a fraction of the energy current lighting does.

Unlike conventional lighting that throws off substantial amounts of wasted energy in the form of heat, this LED directs its energy entirely toward providing light. The benefits are obvious: close to no wasted energy, more efficient lighting, and lower electricity bills for homes and businesses.

At the Department of Energy we are looking to do more to advance this solid state technology from the lab to the marketplace, and we expect to formalize a new partnership with industry and devote more resources to the development of next-generation solid state lighting in the near future.

But we should not be content to simply use electricity more efficiently… we should also strive to distribute it more intelligently.

America's digital economy needs a more reliable, efficient, and flexible electricity infrastructure that can accommodate more efficient distributed generation such as fuel cells, while maintaining low cost electricity to all consumers.

This will require technological advances in sensors, communications and control technologies, advanced conductors and sensors, and transmission monitoring.

Last month, in response to a directive in the President's National Energy Plan, we unveiled a comprehensive study of our nation's electricity grid system. After close to a year of thorough examination of the benefits of establishing a truly national electricity grid, we put forward 51 specific recommendations that, if followed, will bring our increasingly antiquated electricity delivery system into the 21st century.

The future our study contemplates promises greater energy efficiency. How? By providing the framework for a smarter, more efficient electricity grid system that combines the latest technology with distributed energy to transform the ways American consumers get and use power.

It is a future where net metering is commonplace. Net metering moves away from the idea that there can only be one seller and one buyer in an electricity transaction to a vision in which everyone can be a buyer and a seller of electricity. With net metering, you could generate your own power with a micro-turbine or with solar panels at home, and reap the benefits of your own efficiency by conserving and selling excess power into the grid.

It is a future that relies upon future technological advances in superconductivity to more efficiently transmit power over smaller lines and over longer distances. In fact,

the Department is working right now on a project with the private sector in which superconductivity increases the capacity of a transmission line by 300 percent.

It is a future that uses to promise of technology to free consumers from the rolling blackouts, brownouts, and other sorts of problems that plagued Californians early last year.

But our efforts to promote efficiency embody more than technology. With respect to the pursuit of efficiency and the use of renewable resources, we have a responsibility to lead by example.

Our Federal Energy Management Program not only responded to last year's California shortage by finding ways the federal government could reduce energy use around the nation, particularly during peak load periods, but it has led the Government's successful efforts to reduce energy use across the board.

Since 1985 we have reduced the federal government's energy load by 23 percent in standard buildings. And the Department of Energy has done much better than that. DOE used 43.5 percent less energy in 2001 than we did in 1985, and we expect to increase our efficiency by 2 percent per year going ahead.

Moreover we are promoting life cycle cost analysis for new federal buildings. This is a difficult challenge since budget constraints often force project managers to cut corners on energy efficiency features that may cost a little more up front, but pay for themselves many times over during the life of the building. This is a mindset that we must change.

On top of this, we also want the Federal Government to use more renewable energy.

I recently announced DOE's decision to purchase 17 percent of the electricity for our main Forrestal and Germantown headquarters buildings from renewable resources.

That is a remarkable figure. But even more remarkable is the fact that we did so by negotiating costs that were comparable to or even a bit lower than what we had been paying for conventional resources.

We are showing by our example that this can be done.

I am pleased today to announce the next steps in our efforts to promote renewable energy purchases at DOE and throughout the federal government.

I am directing the Western Area Power Administration to join Bonneville Power in instituting a Renewable Energy Credit or "Green Tags" program. Such a program allows customers who want to support green power to purchase it or its "environmental attributes." Such credits can help create new demand for renewable power, and thus help promote new renewable power projects in the region.

But we also want to purchase renewable energy for our own use, so I am also announcing that we have challenged the Department to obtain at least 140 million kilowatt hours of its electricity annually from renewable resources by 2005. I expect our field managers to follow the example we've set at headquarters.

Of course, we will continue to employ Energy Savings Performance Contracts (ESPCs) and other market-based tools that many in this room have helped to pioneer, because an energy efficiency improvement brings superior environmental advantages compared to even the most benign forms of energy production.

I have been able to hit only the highlights of our energy efficiency efforts in the short time available today. You are the experts, so I don't have to tell you of the remarkably beneficial effects of energy efficiency. We can help fuel a growing, thriving economy while reducing demand, reducing costs, and raising environmental quality.

In order to do this, we as a nation have to keep in mind how essential conservation and energy efficiency are to meeting what is projected to be a huge increase in energy demand over the next two decades.

The critics who say our plan depends on drilling our way out of future energy problems have it all wrong. The reality is that we are going to depend on conservation and energy efficiency, and we are going to look to our laboratories and to the genius of the private sector for the new technologies that will deliver on this promise.

We are moving forward on many fronts. Let me assure you that we at the Department of Energy will continue to work with you to advance the brightest energy efficiency ideas, in pursuit of a brighter future.